



SEQUENCE LISTING

<110> Cano, Carlos Antonio Durante
Nieto, Enrique Gerardo Guillen
Acosta, Anabel Alvarez
Munoz, Luis Emilio Carpio
Vazquez, Diogenes Quintana
Rodriguez, Carmen Elena Gomez
Rodriguez, Recardo de la Caridad Siva
Galvez, Consuelo Nazabal
Angulo, Maria de Jesus Leal
Dunn, Alejandro Miguel Martin

<120> Expression System of Heterologous Antigens as Fusion Proteins

<130> LEXSA P-13DIV2

<140> 09/612,925
<141> 2000-07-10

<150> US 08/930,917
<151> 1997-09-16

<150> PCT/CU97/00001
<151> 1997-01-17

<160> 29

<170> PatentIn version 3.2

<210> 1
<211> 1797
<212> DNA
<213> Neisseria meningitidis (group B)

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gtcaaagaag ttaaagttaa agtcggcgac aaaatctctg aaggtggttt gattgtcgac
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540
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gaagtgcgcc acttggctgc caacggtatac aaataccccg agccggaaact cgacatcgat 600

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gcgaaaagcc	gtaaaagtgga	cgttatccaa	ggcgacggc	aattcttaga	tccgcaccac	720
ttggaagtgt	cgctgactgc	cggcgacgcg	tacgaacagg	cagcccctac	cggcgagaaa	780
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agcacgctgg	gttcgcgtt	ggatgtggtt	gaaatgatgg	acggcctgat	gcaaggcgca	1020
gaccgcgatt	tggtaaaagt	atggcaaaaa	caaaacgaat	accgtttga	caacattatg	1080
gtcaacacca	aaaccgttgc	agttgagccg	aaagaagacg	gctttacgt	tacctttgaa	1140
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gcgcacaacg	gcaaactcat	cagcgcgaa	aaagcaggcg	ttgccgtAAC	cgatcgccgc	1260
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<210> 2
 <211> 47
 <212> PRT
 <213> *Neisseria meningitidis* (group B)

<400> 2

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35 40 45

<210> 3
<211> 146
<212> DNA
<213> Neisseria meningitidis (group B)

<400> 3
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taccctgatt actttggatc tagaaa 146

<210> 4
<211> 18
<212> PRT
<213> Neisseria meningitidis (group B)

<400> 4

Val Asn Val Gly Asp Thr Ile Ala Val Asp Asp Thr Leu Ile Thr Leu
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Asp Leu

<210> 5
<211> 18
<212> PRT
<213> Neisseria meningitidis (group B)

<400> 5

Val Glu Val Gly Ser Lys Ile Tyr Val Asp Asp Gly Leu Ile Ser Leu
1 5 10 15

Gln Val

<210> 6
<211> 32
<212> PRT
<213> Neisseria meningitidis (group B)

<400> 6

Leu Val Glu Leu Lys Val Pro Asp Ile Gly Gly His Glu Asn Val Asp
1 5 10 15

Ile Ile Ala Val Glu Val Asn Val Gly Asp Thr Ile Ala Val Asp Asp
20 25 30

<210> 7
<211> 32
<212> PRT
<213> *Neisseria meningitidis* (group B)

<400> 7

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1 5 10 15

Leu Leu Ala Gly Glu Leu Gly Ile Gly Glu Ala Leu Gln Val Asp Asp
20 25 30

<210> 8
<211> 162
<212> PRT
<213> *Neisseria meningitidis* (group B)

<400> 8

Met Val Asp Lys Arg Met Ala Leu Val Glu Leu Lys Val Pro Asp Ile
1 5 10 15

Gly Gly His Glu Asn Val Asp Ile Ile Ala Val Glu Val Asn Val Gly
20 25 30

Asp Thr Ile Ala Val Asp Asp Thr Leu Ile Thr Leu Asp Leu Asp Ser
35 40 45

Arg Gly Ile Arg Ile Gly Pro Gly Arg Ala Ile Leu Ala Thr Ala Gly
50 55 60

Gly Gly Ala Arg Gln Ser Thr Pro Ile Gly Leu Gly Gly Ala Leu Tyr
65 70 75 80

Thr Thr Ala Gly Gly Ala Arg Lys Ser Ile Thr Lys Gly Pro Gly
85 90 95

Arg Val Ile Tyr Ala Thr Ala Gly Gly Gly Ala Arg Lys Arg Ile His
100 105 110

Ile Gly Pro Gly Arg Ala Phe Tyr Thr Thr Ala Gly Gly Gly Ala Arg
115 120 125

Lys Arg Ile Thr Met Gly Pro Gly Arg Val Tyr Tyr Thr Thr Ala Gly
130 135 140

Gly Gly Ala Ser Ile Arg Ile Gln Arg Gly Pro Gly Arg Ala Phe Val
145 150 155 160

Thr Ile

<210> 9
<211> 489
<212> DNA
<213> Neisseria meningitidis (group B)

<400> 9
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ctgattactt tggatctaga ctcgagaggc attcgtatcg gcccaggtcg cgcaatttta 180
gcaacagctg gcggtggcgc acgtcaatct acccctattg gtttaggtca ggctotgtat 240
acgactgccc gcgggtggtgc ggcggaaaagt atcaccaagg gtccaggccg cgtcatttac 300
gccaccgcgg gcggcgggtgc ccgtaaagcgt atccacatttgc gcccaggccg tgcattctat 360
actacagcag gtggtggcgc acgtaaacgc atcactatgg gtcctggtcg cgtctattac 420
acgaccgcgt gcggcgggtgc tagcattcgc atccaaacgcg gccctggtcg tgcatttttg 480
accatatga 489

<210> 10
<211> 47
<212> PRT
<213> Neisseria meningitidis (group B)

<400> 10

Met Leu Asp Lys Arg Met Ala Leu Val Glu Leu Lys Val Pro Asp Ile
1 5 10 15

Gly Gly His Glu Asn Val Asp Ile Ile Ala Val Glu Val Asn Val Gly
20 25 30

Asp Thr Ile Ala Val Asp Asp Thr Leu Ile Thr Leu Glu Thr Asp
35 40 45

<210> 11
<211> 29
<212> DNA
<213> Artificial

<220>
<223> Primer 5' No. 1573

<400> 11
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29

<210> 12
<211> 29
<212> DNA
<213> Artificial

<220>
<223> Primer 3' No. 1575

<400> 12
tttctagatc caaagtaatc agggtatcg

29

<210> 13
<211> 26
<212> DNA
<213> Artificial

<220>
<223> Primer 3' No. 2192

<400> 13
ggcggttctg ccgatataagg atccga

26

<210> 14
<211> 16
<212> DNA
<213> Artificial

<220>
<223> Oligonucleotide used to introduce restriction sites XbaI, EcoV,
and BamHI in the 3' end of the stabilizer fragment of SEQ. ID.
NO. 13

<400> 14
ctagatttga tatcag 16

<210> 15
<211> 16
<212> DNA
<213> Artificial

<220>
<223> Oligonucleotide used to introduce restriction sites XbaI, EcoV,
and BamHI in the 3' end of the stabilizer fragment of SEQ. ID.
NO. 13

<400> 15
gatcctgata tcaaat 16

<210> 16
<211> 15
<212> PRT
<213> Human immunodeficiency virus type 1

<400> 16

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1 5 10 15

<210> 17
<211> 15
<212> PRT
<213> Human immunodeficiency virus type 1

<400> 17

Arg Gln Ser Thr Pro Ile Gly Leu Gly Gln Ala Leu Tyr Thr Thr
1 5 10 15

<210> 18
<211> 15
<212> PRT
<213> Human immunodeficiency virus type 1

<400> 18

Arg Lys Ser Ile Thr Lys Gly Pro Gly Arg Val Ile Tyr Ala Thr
1 5 10 15

<210> 19
<211> 15
<212> PRT
<213> Human immunodeficiency virus type 1

<400> 19

Arg Lys Arg Ile His Ile Gly Pro Gly Arg Ala Phe Tyr Thr Thr
1 5 10 15

<210> 20

<211> 15

<212> PRT

<213> Human immunodeficiency virus type 1

<400> 20

Arg Lys Arg Ile Thr Met Gly Pro Gly Arg Val Tyr Tyr Thr Thr
1 5 10 15

<210> 21

<211> 15

<212> PRT

<213> Neisseria meningitidis (group B)

<400> 21

Ser Ile Arg Ile Gln Arg Gly Pro Gly Arg Ala Phe Val Thr Ile
1 5 10 15

<210> 22

<211> 15

<212> PRT

<213> Human immunodeficiency virus type 1

<400> 22

Thr Ser Ile Thr Ile Gly Pro Gly Gln Val Phe Tyr Arg Thr Gly
1 5 10 15

<210> 23

<211> 15

<212> PRT

<213> Human immunodeficiency virus type 1

<400> 23

Arg Gln Arg Thr Ser Ile Gly Gln Gly Gln Ala Leu Tyr Thr Thr
1 5 10 15

<210> 24

<211> 5

<212> PRT

<213> Artificial

<220>

<223> Spacer peptide that divides the various V3 epitopes in the MEPs
TAB3, TAB4, TAB9, and TAB13

<400> 24

Ala Gly Gly Gly Ala
1 5

<210> 25

<211> 141

<212> PRT

<213> Artificial

<220>

<223> Multiepitopic polypeptides that includes several copies of the
central part of the variable region 3 of the gp120 protein of the
HIV-1

<400> 25

Met Ala Pro Thr Ser Ser Ser Thr Ala Gln Thr Gln Leu Gln Leu Glu
1 5 10 15

His Leu Leu Leu Asp Leu Gln Ile Phe Leu Ser Arg Gly Ile Arg Ile
20 25 30

Gly Pro Gly Arg Ala Ile Leu Ala Thr Ala Gly Gly Ala Arg Gln
35 40 45

Ser Thr Pro Ile Gly Leu Gly Gly Ala Leu Tyr Thr Thr Ala Gly Gly
50 55 60

Gly Ala Arg Lys Ser Ile Thr Lys Gly Pro Gly Arg Val Ile Tyr Ala
65 70 75 80

Thr Ala Gly Gly Ala Arg Lys Arg Ile His Ile Gly Pro Gly Arg
85 90 95

Ala Phe Tyr Thr Thr Ala Gly Gly Ala Arg Lys Arg Ile Thr Met
100 105 110

Gly Pro Gly Arg Val Tyr Tyr Thr Thr Ala Gly Gly Ala Ser Ile
115 120 125

Arg Ile Gln Arg Gly Pro Gly Arg Ala Phe Val Thr Ile
130 135 140

<210> 26
<211> 162
<212> PRT
<213> Artificial

<220>
<223> Multiepitopic polypeptides that includes several copies of the central part of the variable region 3 of the gp120 protein of the HIV-1

<400> 26

Met Val Asp Lys Arg Met Ala Leu Val Glu Leu Lys Val Pro Asp Ile
1 5 10 15

Gly Gly His Glu Asn Val Asp Ile Ile Ala Val Glu Val Asn Val Gly
20 25 30

Asp Thr Ile Ala Val Asp Asp Thr Leu Ile Thr Leu Asp Leu Asp Ser
35 40 45

Arg Gly Ile Arg Ile Gly Pro Gly Arg Ala Ile Leu Ala Thr Ala Gly
50 55 60

Gly Gly Ala Arg Gln Ser Thr Pro Ile Gly Leu Gly Gly Ala Leu Tyr
65 70 75 80

Thr Thr Ala Gly Gly Ala Arg Lys Ser Ile Thr Lys Gly Pro Gly
85 90 95

Arg Val Ile Tyr Ala Thr Ala Gly Gly Ala Arg Lys Arg Ile His
100 105 110

Ile Gly Pro Gly Arg Ala Phe Tyr Thr Thr Ala Gly Gly Gly Ala Arg
115 120 125

Lys Arg Ile Thr Met Gly Pro Gly Arg Val Tyr Tyr Thr Thr Ala Gly
130 135 140

Gly Gly Ala Ser Ile Arg Ile Gln Arg Gly Pro Gly Arg Ala Phe Val
145 150 155 160

Thr Ile

<210> 27
<211> 202
<212> PRT
<213> Artificial

<220>
<223> Multiepitopic polypeptides that include several copies of the central part of the variable region 3 of the gp120 protein of the HIV-1

<400> 27

Met Val Asp Lys Arg Met Ala Leu Val Glu Leu Lys Val Pro Asp Ile
1 5 10 15

Gly Gly His Glu Asn Val Asp Ile Ile Ala Val Glu Val Asn Val Gly
20 25 30

Asp Thr Ile Ala Val Asp Asp Thr Leu Ile Thr Leu Asp Leu Asp Ser
35 40 45

Arg Gly Ile Arg Ile Gly Pro Gly Arg Ala Ile Leu Ala Thr Ala Gly
50 55 60

Gly Gly Ala Arg Gln Ser Thr Pro Ile Gly Leu Gly Gln Ala Leu Tyr
65 70 75 80

Thr Thr Ala Gly Gly Ala Arg Lys Ser Ile Thr Lys Gly Pro Gly
85 90 95

Arg Val Ile Tyr Ala Thr Ala Gly Gly Ala Arg Lys Arg Ile His
100 105 110

Ile Gly Pro Gly Arg Ala Phe Tyr Thr Thr Ala Gly Gly Ala Arg
115 120 125

Lys Arg Ile Thr Met Gly Pro Gly Arg Val Tyr Tyr Thr Thr Ala Gly
130 135 140

Gly Gly Ala Arg Gln Arg Thr Ser Ile Gly Gln Gly Gln Ala Leu Tyr
145 150 155 160

Thr Thr Ala Gly Gly Ala Thr Ser Ile Thr Ile Gly Pro Gly Gln
165 170 175

Val Phe Tyr Arg Thr Gly Ala Gly Gly Ala Ser Ile Arg Ile Gln
180 185 190

Arg Gly Pro Gly Arg Ala Phe Val Thr Ile
195 200

<210> 28

<211> 368

<212> DNA

<213> Artificial

<220>

<223> Synthetic fragment that codifies for MEP TAB9. Restriction sites XbaI and BamHI are introduced.

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tggtgcgccgc aaaagtatca ccaagggtcc aggccgcgtc atttacgcca ccgcggggcgg 180

cggtgcccgta aagcgtatcc acattggccc aggccgtgca ttctatactta cagcaggtgg 240

tggcgcacgt aaacgcatacata ctatgggtcc tggtcgcgtc tattacacga ccgctggcgg 300

cggtgctagc attcgcatacc aacgcggccc tggtcgtgca tttgtgacca tatgataacg 360

cgggatcc 368

<210> 29

<211> 5

<212> PRT

<213> Neisseria meningitidis (group B)

<400> 29

Met Leu Asp Lys Arg

1 5